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Silicone Rubber

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Rubber Fabrication

Rubber Physical and Chemical Properties

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Thermal Expansion

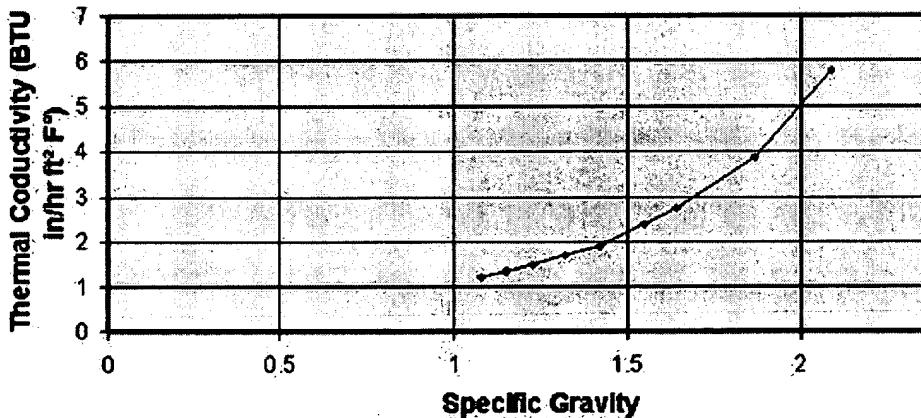
The coefficient of volumetric thermal expansion for all *Silastic®* silicone rubber products is in the range of $5.9 \times 10^{-4}/^{\circ}\text{C}$. The linear coefficient of thermal expansion is roughly one-third of the volumetric coefficient of thermal expansion. This can be used to calculate the total linear thermal expansion of a rubber part over a temperature range.

Example: If the volumetric coefficient of thermal expansion is $5.9 \times 10^{-4}/^{\circ}\text{C}$ and the temperature span is 150°C , the resulting linear expansion of a part one-inch long would be ... $5.9 \times 10^{-4}/^{\circ}\text{C} \times 150^{\circ}\text{C} \times 1 \text{ in.} = 0.0295 \text{ in.}$

Thermal Conductivity

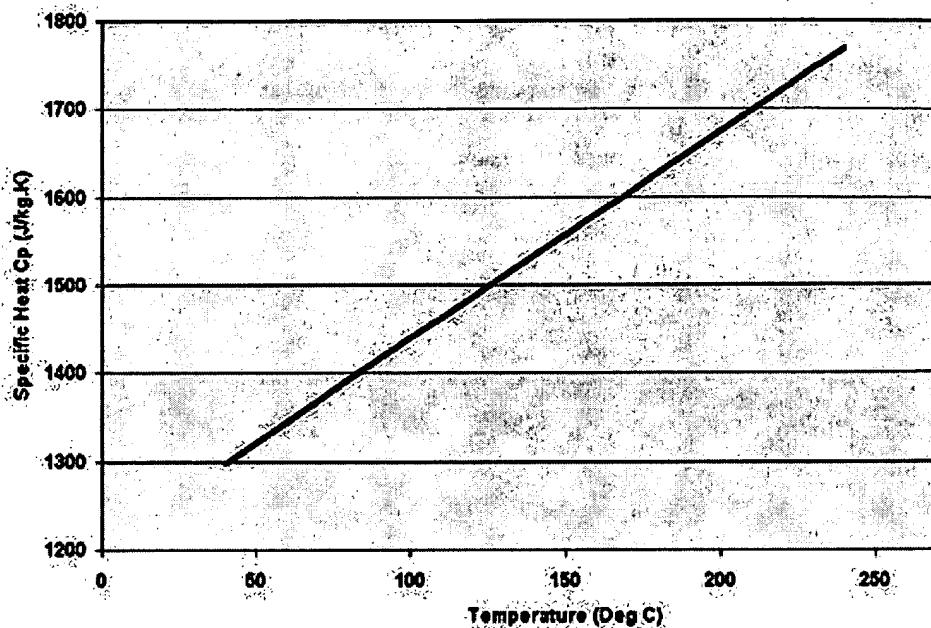
Values usually range from 0.330 to $0.515 \times 10^{-3} \text{ g-cal/sec/cm}^2/\text{cm}^{\circ}\text{C}$.

Thermal Conductivity, K



Specific Heat

The specific heat of *Silastic* silicone rubber ranges from 0.28 to $0.35 \text{ cal/gr}^{\circ}\text{C}$. Generally, the higher hardness compounds (60 or more durometer points) are at the low end of this range and lower hardness rubbers are at the high end.

Specific Heat of Sylastic® Liquid Silicone Rubber

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